Journal of Obesity and Chronic Diseases

http://doi.org/10.17756/jocd.2024-suppl1

Meeting Abstracts

Open Access

8th International Conference on Obesity and Chronic Diseases (ICOCD-2024)

Keynote Talks

Weight Management in Cardiac Rehabilitation, Assessment and Intervention: Literature Review

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Abstract

Obesity has been determined to be an important risk factor for cardiovascular disease among men and women, although specific data on racial/ethnic minorities are lacking. Obesity appears to interact with or amplify the effects of other risk factors by mechanisms that as yet remain frontiers for further research. Alarming data from the national health and nutrition exam surveys show that the prevalence of obesity among Americans has increase over the past 20 years, such that an estimated 47 million adults Americans are deemed to be overweight. Thus, obesity should be viewed as a prevalent, serious and to date, refractory health problem.

Qualitative and Economic Impact of Standardized and Digitalized Operation Room Processes in Obesity Surgery

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Abstract

Background: Increasing economic and especially in Germany political pressure is forcing hospitals to optimise processes. Digital innovations can help to reduce costs and improve the quality of patient care. In contrast to other sectors, however, this approach is lagging behind the technical possibilities in the healthcare sector.

Materials: As part of a retrospective, monocentric case-control study, we analysed the extent to which the efficiency of the operation, postoperative quality and therefore overall costs are influenced by optimised digitalised and standardised intraoperative workflows in laparoscopic Roux-en-Y gastric bypass (LRYGB).

Results: The study comprised two groups of 49 patients each. A significant increase in efficiency and cost-effectiveness was demonstrated as a result of digital, standardised optimisation. The hospital stay was 1.2 days shorter in the treatment group. The standard deviation of total operating time and skin-to-skin time decreased in the treatment group. The results of the odds ratio did not allow any conclusions to be drawn about quality. Overall, costs were reduced and total revenue improved.

Laparoscopic Sleeve Gastrectomy Following Failed Laparoscopic Adjustable Gastric Banding -A Comparison Between One-and Two-stage Procedures, Our Combined Experience Using Both an Israeli National Database Study, and A Retrospective Cohort Study

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Abstract

Introduction: Our study aimed to compare single and two-stage laparoscopic sleeve gastrectomy (LSG) following laparoscopic adjustable gastric banding (LAGB) in terms of short and mid-term outcomes and quality of life measures.

Methods: Data from the Israeli National Bariatric Surgery Registry was one part of comorbidities, postoperative complications, and anthropometric outcomes. The other part of the study involved a retrospective cohort study of a sample of revisional LAGB patients who were interviewed to add the component of quality of life using the BAROS score.

Results: In the national database, 595 patients included in the data analysis, 381 (64%) underwent one-stage, and 214 (36%) had two-stage LSG-no differences between the groups in complication rates (5.0% vs 5.1%, p = 0.93). No difference was observed in the percent excess weight loss (51% vs 56%; p = 0.34 and 66% vs 72%; p = 0.38, at six months and 12 months postoperative, respectively). In the focus quality of life group, we had 93 patients, of whom 68 (73.1%) underwent a single-stage revisional LSG. There were no differences in short- and mid-term complications, weight loss, and quality of life.

Conclusion: Our study has shown that single-step LSG had a similar safety profile as two-stage LSG following a failed LAGB. In selected cases, laparoscopic sleeve gastrectomy as a revision of failed gastric banding in one stage is as safe as a two-stage procedure regarding short- and mid-term complications, weight loss, and quality of life.

The Holobiont: Dual Inheritance and Immune-Gut-Brain Triangle

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Abstract

Following her recognition of the emergence of the eukaryotes by symbiosis of representatives of both archaea and bacteria, during the last quarter of the 20th century Lynn Margulis went on to consider the wider role of symbiosis in multicellular evolution, eventually developing the concept of the holobiont the biology of unicellular entities working alongside a multicellular organism. At more or less the same time, Carl Woese coined the expression "Darwinian threshold" in recognition of the very different ways in which uni- and multi-cellular organisms evolve within their environment – "below the threshold" by horizontal gene transfer versus "above the threshold" by vertical gene transfer. In summary, the holobiont principle confers both stability and flexibility but requires to be passed on down the generations via a dual inheritance – both multi- and uni-cellular. Unfortunately, however, the vertebrate holobiont has not evolved to deal with heavy metal ions.

NoRCEL is an unfunded network of researchers primarily interested in the emergence of life from an abiotic environment. While considering the simplest form of life, the prokaryotes, i realised its application to understanding the greatest medical challenge of modern times - a "triangle" of non-communicable disease: autoimmunity, weight gain, and poor mental health. I am currently working on the principle that the visible, multicellular, forms of life developed as a supplement to, rather than a replacement of, their original microbial communities. Paring down the residual function of a hypothetical microbial community leaves a role for the immune system, viz: "to set a thief to catch a thief".

An Observational Study, Investigating the Frequency and Spread of Incidences of Constipation and Diarrhoea in Participants of the NHS Type 2 Diabetes Path to Remission Programme

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Abstract

Introduction: Xyla health and wellbeing deliver the NHS type 2 diabetes path to remission programme (T2DR). The 52-week programme begins with 12 weeks of total diet replacement (TDR). During the TDR phase we receive more frequent reports of

constipation and diarrhoea (C&D). The purpose of this study is to analyze the frequency and spread of incidences of C&D in participants on the T2DR programme.

Methods: All health incidents (HI's) experienced by participants are recorded. The data from all 13,625 HIs between October 2020 and February 2024 were analyzed. All incidences of C&D were plotted relative to TDR Commencement date to assess frequency and overall trend.

Results: 59% of all C&D HIs occurred within weeks 1-4 of TDR Commencement (an average of 336 C&D reports per week), approximately equal to a 1 in 10 chance of experiencing C&D. In weeks 5-8, C&D frequency drops by 73% (average of 89 instances per week), and in the final 4 weeks of TDR (weeks 9-12), it drops by another 50% (average of 44 instances per week). In the 4 weeks after TDR (food re-introduction) we see an average of 16 C&D per week (reduction of 63%).

Discussion: The likelihood of experiencing C&D after week 4 is significantly reduced. This knowledge may reassure prospective participants and referrers, potentially increasing uptake of the T2DR programme, thereby supporting more individuals on their path to diabetes remission. Further study is required to assess the impact of strategies implemented to manage C&D during TDR, such as increased fibre intake.

Role of Malic Enzyme 1 (Me1) in Obesity, Weight Loss and Insulin Signalling

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Abstract

Obesity is a global health problem. Obesity is a major risk factor for diabetes, cardiovascular and cerebrovascular diseases, certain types of cancers (e.g. breast, liver, colon), etc. Malic enzyme 1 (Me1), a cytosolic protein that catalyzes the conversion of malate to pyruvate and generates NADPH from NADP. ME1 pool of NADPH is used in lipogenesis and cholesterol biosynthesis. Specifically, NADPH is used in rate-limiting steps catalyzed by fatty acid synthase (FASN) and β-Hydroxy β-methyl-glutaryl-CoA (HMG-CoA) reductase. We found that in MOD-1 mice with genetic loss of Me1 gene expression and function, high fat (HF) diet resulted in lower body weights, less adiposity and smaller adipocyte sizes. MOD-1 mice showed reduced hepatosteatosis with decreased levels of circulating leptin and insulin, but higher adiponectin levels compared to wild-type (WT) counterparts. Gene expression of peroxisome proliferators–activated receptor- (PPAR) was decreased while insulin-receptor substrate 2 (IRS2) was up-regulated in livers of MOD-1 HF diet fed mice. IRS2 is a cytoplasmic adaptor signalling protein that mediates effects of insulin, insulin-growth factor 1 (IGF1) and other cytokines that have been involved in insulin sensitivity and resistance. MOD-1 female mice fed w/HF diet displayed smaller size adipocytes in mammary fat pads and significantly lower mammary gland expression of leptin and PPAR compared to WT counterparts. Based on these findings, loss of ME1 protein expression and function has protective effects against HF diet-induced obesity, hyperleptinemia, hyperinsulinemia and hepatosteatosis. Future targeted drug therapy against ME1 provides a promising approach to treat obesity and its associated co-morbidities.

Psychosocial Factors Associated with Well-being and HbA1c of People with Diabetes in Japan: A Structural Equation Model

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Abstract

The purpose of this study is to investigate psychosocial factors (independent and interdependent self-construal, emotional support) that may influence the health and well-being of people with diabetes in an interdependent culture. We conducted a cross-sectional survey on outpatients of type 1 and type 2 diabetes mellitus in Japan (N = 180, age 22–88 years, M = 62.48 years), to examine their independent and interdependent self- construal, perceived emotional support, and well-being (interdependent happiness). HbA1c data was obtained from their recent health record via their endocrinologists. Correlation analyses and structural equation modeling (SEM) were conducted to examine the relation between these variables. Patients' well-being correlated positively with age, independent self-construal, perceived emotional support, and negatively with HbA1c levels, but did not correlate with interdependent self-construal. SEM showed that, after controlling for age and gender, independence was related to perceived emotional support and well-being, which were in turn related to lower HbA1c levels. Our research suggests that, for people with diabetes in Japan, independence rather than interdependence is associated with their psychological well-being and health outcome.

Evaluation of a Weight Stigma Education Module in Dentistry and Oral Health Therapy Students

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Abstract

Background: Interventions to reduce weight stigma in the dental setting are limited.

Aim: To evaluate a weight stigma educational module in a dental student population.

Methods: First and final year oral health therapy (OHT) and dentistry students at two Australian universities were invited to participate. An introductory lecture on obesity in dentistry was given to all students, followed by completion of a healthcare professional educational module on obesity science and patient experience of obesity. Participant pre-post intervention surveys assessed weight stigma, attitudes and beliefs regarding obesity. Participants rated the module for usefulness and relevance to dental settings and recommended changes. Mixed methods were used for analysis.

Results: 217 students received the lecture and participated in the pre-intervention survey, with 128 students (n = 90 OHT; n = 38 dentistry) completing the educational module and post- intervention surveys. Post-intervention, participants reported understanding factors beyond personal control contribute to obesity (92.2%), that tailored approaches to treatment are needed (84.4%) using evidence-based, person-centred care for people living with obesity (85.9%). They agreed on importance of healthcare practitioners acknowledging weight stigma to improve care (89.1%). However, 21.9% agreed/strongly agreed that people living with obesity should control their body weight better. Several recommended patient examples in the dental setting, including communication approaches and oral health implications of obesity.

Conclusions: A weight stigma educational module was able to improve the understanding of obesity, among dental and oral health therapy students but did not fully address issues of individual blame. Dental relevance could be increased through patient examples in the dental setting.

Effects of Video Game Avatar Size on Eating and Exercise Habits in Females

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Abstract

Past research suggests that differently sized avatars in a video gaming situation can influence body image. For example, males who played video games with an underweight avatar indicated a desire to be larger, while females who played video games with an overweight avatar indicated a desire to be smaller. Given these results, avatar size may also influence exercise and eating habits. The present study assessed the effects of video game avatar size on exercise and eating behavior. Females (n = 32) completed two different video game playing scenarios for one week, which included either an underweight or an overweight avatar via the Xbox 360 game console WWE 2K16 game which allowed for the customization of avatars which differed in body size. Each participant kept an exercise log and food diary during testing. Experiencing the overweight avatar did not affect exercise habits, but did decrease total weight of food consumption in grams [$F(1,31) = 45.11$, $p = 0.000$], total calories [$F(1,31) = 19.53$, $p = 0.000$], and calories from fat [$F(1,31) = 24.06$, $p = 0.000$]. These results lend support to the use of video avatars in a gaming situation as a supplement to weight management. The female participants appeared to identify negatively with the overweight avatar, and desired to look more like the underweight avatar. Future research should examine actual weight loss over time.

Comparison of Different Methods for the Central Obesity Evaluation

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Abstract

Introduction: The abdominal fat mass (referred to as abdominal, central or visceral obesity) is strongly associated with a range of metabolic disorders and cardiovascular mortality. However, there is no consensus regarding the measurement protocol of central obesity assessment. Moreover, it can be hypothesized that the different considered reference methods lead to inconsistent of evaluating central obesity. Therefore, the aim was to compare different methods for the central obesity assessment.

Methods: The anthropometric measurements (waist circumstance (WC), waist-to-hip ratio (WHR), waist-to-height ratio (WHtR)) and the bioelectrical impedance analysis (BIA,Tanita Europe GmbH, MC 780 MA P, Japan) were used to assess central obesity among twenty overweight/obese participants (10 males; 10 females; age 45 ± 11.4 years; height 170 ± 8.63 cm; body mass 91.3 ± 19.2 kg, BMI 31.7 ± 5.31units). Comparison of methods was made descriptively by comparing the rates of persons identified as central obese.

Results: According to WC assessment, central obesity was defined in nineteen participants (9 males, WC 109 ± 12.4 cm; 10 females, WC 99 ± 7.07 cm). WHR assessment revealed that all twenty participants were determined to have central obesity (10 males, WHR 0.98 ± 0.05 units; 10 females, WHR 0.91 ± 0.04units). WHtR assessment showed also that all twenty participants were determined to have central obesity (10 males, WHtR 0.61 ± 0.07 units; 10 females, WHtR 0.59 ± 0.03units). BIA measurements detected central obesity only in five participants (1 female and 4 males, BIA 18.2 ± 8.2 units).

Conclusion: The anthropometric measurements and BIA method exhibit differences of estimating the central obesity. Large-population studies with different BIA devices are needed to substantiate these results.

Effect of Reduced Dietary Fat on Estradiol, Adiponectin, and IGF-1 Levels in Postmenopausal Women with Breast Cancer

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Abstract

Introduction: In recent years, epidemiological studies have strongly related obesity with an increased risk of developing postmenopausal breast cancer. The aromatization of fatty tissue increases the levels of estradiol and adiponectin, which is correlated with the body mass index (BMI).

Objective: The aim of this study is to investigate the effect of reduced dietary fat on the levels of serum estradiol, adiponectin, and IGF-1 among postmenopausal Mexican women with breast cancer.

Methods: In this controlled clinical trial, 100 female patients were randomly divided into two groups and followed for six months. Group 1 (n = 50) was subjected to reduced dietary fat, whereas Group 2 (n = 50) was subjected to a control diet. The levels of serum estradiol and testosterone were determined using an enzyme-linked immunosorbent assay, whereas the concentrations of adiponectin and IGF-1 were determined using a radioimmunoassay.

Results: The patients subjected to reduced dietary fat showed a significant difference in BMI (27.93 ± 4.45 vs 26.05 ± 2.65; p = 0.01) and waist circumference (99.92 vs 91.59 cm; p = 0.0001) after the treatment. A significant decrease in serum estradiol was observed (21.23 ± 14.32 vs 16.05 ± 10.25 ng/mL; p < 0.001). The adiponectin concentration also decreased significantly (47.53 ± 12.19 vs 42.52 ± 12.34 µg/ml; p = 0.004), while IGF-1 and testosterone did not show significant changes (p > 0.05). BMI had a relationship with adiponectin (r = -0.27; p = 0.02) and estradiol (r = 0.37; p = 0.001).

Conclusion: The current study shows that reducing BMI decreases serum estradiol and adiponectin. Large clinical trials are needed to investigate the role of adiponectin in breast cancer development in obese women.

Clinical Profile of Patients with Stage II Hypertension Depending on the Presence of Premorbid Obesity

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Abstract

Goal: To evaluate the clinical, laboratory and instrumental profile of patients with essential arterial hypertension of the II stage depending on the presence of premorbid obesity.

Materials and Methods: 71 patients with stage II primary arterial hypertension were examined, among whom 44 patients had obesity (BMI > 30 kg/m2) and 27 patients without obesity (BMI < 30 kg/m^2). All patients underwent a comprehensive clinical, anthropometric, laboratory and instrumental examination, cardiovascular disease risk factors were assessed, and blood pressure was monitored daily.

Results: It was found that in the group of obese patients (BMI > 30 kg/m^2) there were 14 (31.8%) men and 30 (68.2%) women, which was significantly ($p = 0.01$) different from the group of non- obese patients (BMI < 30 kg/m^2), in which there were 17 (63.0%) men and 10 (37%) women. Analysis of cardiovascular risk factors showed a significantly higher number of patients with dyslipidemia ($p = 0.009$), liver steatosis ($p = 0.003$), abdominal type of adipose tissue deposition ($p < 0.0001$) and arterial hypertension of the 3 degrees ($p = 0.04$) in the group of patients with obesity. In addition, patients with obesity had a significantly higher value of diastolic blood pressure time index ($p = 0.02$). In hypertensive patients, obesity was associated with elevated levels of low-density lipoprotein cholesterol, cystatin C, and a tendency toward decreased glomerular filtration rate.

Conclusion: In patients with stage II essential hypertension, the presence of obesity was associated with female sex, dyslipidemia, liver steatosis, abdominal type of adipose tissue deposition, the highest degree of blood pressure, and diastolic blood pressure disorders.

Interaction Between Orexinergic and GLP-1 Systems: Does this Dynamic Interplay Modulate Epilepsy?

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Abstract

Purpose: Hypothalamus-produced neuropeptides such as orexins are recognized regulators of appetite, feeding, and sleep/wake cycles. Recent findings indicate that sitagliptin, a DPP- 4 inhibitor, known to elevate GLP-1 levels, and orexinergic systems, might be associated with epileptic seizures. The primary aim of this investigation was to assess the effect of sitagliptin on orexin-2 receptors (OX2R) of cortex and spike-and-wave discharges (SWDs) of Absence Epilepsy Rats from Strasbourg (GAERS).

Methods: Male adult GAERS underwent stereotaxic surgery. Following a one-week recovery period, either artificial cerebrospinal fluid (n = 6) or a 150 µg dose of sitagliptin (n = 4) was administered via the intracerebroventricular route. SWDs were detected and analyzed using EEG recordings. Then animals underwent perfusion, and the coronal sections of the somatosensory cortex were immunofluorescently stained to observe the expression of OX2R. Results are presented as mean ± SEM, with statistical analysis conducted through two-way ANOVA.

Results: Sitagliptin administration resulted in an increase in the mean duration of certain SWDs observed for up to an hour post-injection. When considering the mean duration of each individual SWD within specific time intervals, it was noted that overall, the recording, sitagliptin exhibited shorter durations compared to the control (aCSF). In order to evaluate the OX2R positive cells (Image J, USA software), densitometric measurements of the cortex layers were analyzed.

Conclusion: These results indicate that sitagliptin might trigger a partial augmentation in prolonged epileptic seizures. Nevertheless, additional studies are necessary to confirm these findings.

Funding: This study is supported by European Commission Horizon Europe Programme under HORIZON-WIDERA-2021-ACCESS-03 call [Grant Number 101078981-GEMSTONE]

Absence of the Vagus Nerve and Anemia Affect Glucose Homeostasis

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Abstract

Objective: Evaluate the effect of subdiaphragmatic vagotomy on glucose homeostasis in anemic obese rats. Methods: Ethics committee approval nº 13-22. Hypothalamic obesity was induced in the neonatal period by monosodium glutamate (MSG; 4 g/Kg). The control (CTRL) group received saline equimolar. On post-natal day (PND) 60, the animals underwent subdiaphragmatic vagotomy (SV) or sham surgery (SHAM). On PND90, the animals were phenylhydrazine-induced anemia (PHZ; 3 doses; 40 mg/kg). the non-anemic group (Negative) received saline solution (0.9%). The oral glucose tolerance test (2 g/kg) was performed on PND116. Adiposity was measured by inguinal adipose tissue weight and body weight. Plasma parameters such as glucose, triglycerides, and iron were evaluated on PND120. Insulin resistance was assessed by the Triglyceride-Glucose index (TyG).

Results: Compared to CTRL group, obese rats exhibited higher retroperitoneal and inguinal adipose tissue, glucose, triglycerides, and TyG index ($p < 0.05$), while serum iron and spleen were lower in MSG group ($p < 0.05$). MSG SV with or without anemia presented lower body weight and retroperitoneal adipose tissue compared to MSG SHAM group ($p < 0.05$). However, inguinal adipose tissue was affected by the interaction of anemia and vagotomy ($p < 0.05$), as the SHAM PHZ group had a reduction, while SV PHZ group had an increase. Spleen size was influenced only by anemia, as MSG SHAM PHZ rats had bigger spleen than negative group ($p < 0.05$). Both vagotomy and anemia affected glucose tolerance ($p < 0.05$); PHZ groups increased glucose sensibility, whereas SV groups worsened. Conclusion: Vagotomy and anemia have distinct impacts on fat accumulation and glucose tolerance.

Interplay Between Fetal Hemoglobin, Micronutrients and Oxidative Stress Biomarkers in Sickle Cell Anemia Children

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Abstract

Foetal haemoglobin (HbF has been speculated to have an impact on the quantity of micronutrients and the latter also have a role to play in oxidative stress (OS) in sickle cell anaemia (SCA). No previous study in Ghana has examined the interplay of these factors together among SCA children. This study compared the levels of OS biomarkers (8-hydroxy- deoxyguanosine [8-OHdG] total antioxidant capacity [TAC]) and micronutrients (zinc and copper), and their relationship with HbF in SCA and sickle cell negative, apparently healthy children. This case-control study recruited 58 SCA (out-patients [n = 42] and in-patients [n = 16]) children aged 1–14 years as cases and 62 sickle cell negative children as controls from the Sickle Cell Unit at the Eastern Regional Hospital, Ghana. The micronutrients were measured using the atomic absorption spectrophotometer (AAS) whereas OS biomarkers and HbF were assayed using enzyme-linked immunosorbent assay (ELISA). SCA out- patients had a significantly higher level of HbF compared to HbA patients ($p = 0.035$). SCA in-patients had significantly increased levels of zinc, but a reduced 8-OHdG than SCA out- patients compared to control group ($p < 0.05$). HbF correlated significantly ($r = 0.318$, $p < 0.038$) with zinc in SCA out-patients. Micronutrients are essential in maintaining the redox status in SCA out-patients and HbF can influence some micronutrients.

Hormonal Imbalances Observed in Pre-diabetes Participants Based in Durban, South Africa

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Abstract

Aim: The development of type 2 diabetes mellitus is linked to the imbalance of hormonal concentrations. However, the knowledge about hormonal alterations in pre-diabetes is limited. The study aimed to examine possible changes in hormone levels during the early pre-diabetes phase in participants aged 25-45 in Durban, South Africa.

Methods: Using plasma samples from a cross-sectional study that recruited 364 participants, we blindly selected 38 samples from persons without pre-diabetes and 38 from persons with HbA1c-determined pre-diabetes. Then, various hormone concentrations of the study participants were measured using the BIO-RAD Bio-Plex MAGPIX instrument.

Results and Conclusion: GIP, sex hormones and thyroid hormone imbalance were detected in study participants with pre-diabetes. Most of the hormone dysregulation associated with T2DM begins in pre-diabetes but at a moderate level. The findings contribute to the growing support for targeting pre-diabetes as a preventative measure for T2DM prevention.

Keywords: Pre-diabetes, Incretins, Adipokines, Endocrinology, Sex steroids, Thyroid hormones

Fasting Insulin Level is Negatively Associated with the Telomere Length in Mexican Children

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Abstract

Background: Recent studies have highlighted the importance of studying the telomere shortening in association with metabolic diseases. However, this field is still unclear in the Mexican children population.

Objectives: To analyze the association of obesity, insulin level and homeostatic model assessment of insulin resistance (HOMA-IR) with the telomere length in 171 children with normal weigh and 172 with obesity from Mexico city.

Methods: Anthropometric data were collected in this cross-sectional study. While glucose level was determinate by enzymatic colorimetry assay, insulin was measured by chemiluminescence. HOMAR-IR was calculated using the equation by Matthews et al. (1985). Telomere length was determined using quantitative-PCR.

Results: The association between obesity and telomere length was not significant (β = 0.012 ± 0.022, p = 0.688, model adjusted for age and sex). However, insulin level and HOMAR-IR were negatively associated with telomere length (βInsulin level = -0.007 ± 0.002, p = 0.002; βHOMA-IR = -0.034 ± 0.011, p = 0.003; model adjusted for age, sex and obesity status).

Conclusion: Our data support one of the first evidence in Mexican children regarding a negative association of insulin level and HOMA-IR with the telomere length. This evidence encourages further research to understand the risk factors associated with the telomere shortening in order to propose novel strategies to prevent the loss of DNA during cell division in Mexicans with insulin resistance.

Coordinated Medical and Dental Training for Interdisciplinary Management of Bariatric Patients

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Abstract

Bariatric dentistry is the branch of dental medicine focused on preventive and comprehensive oral health care of overweight or obese patients. Obesity is an increasing US and international health problem and is a condition characterized by abnormal or excessive fat accumulation in the adipose tissue and is categorized by body mass index (BMI) according to the world health organization (WHO). With the increase of morbid obesity worldwide and the unfavourable effect on the overall health and life expectancy, it is necessary that proper accommodations are made for accessible dental care of this vulnerable population of patients. A patient's medical, economic, social, and geographic situation can profoundly affect the ability to access basic oral health care, with little thought for obtaining advanced dental services.

The emergency and the subsequent elective dental treatment of a patient with a morbid obesity demonstrates the importance of necessary equipment, a multidisciplinary approach, and broad networking communication needed to treat bariatric patients. The aim of this presentation is to bring awareness and start professional discussions on the importance of dental and medical practitioners in the community and the academic programs working together to assure access for primary oral health for bariatric patients. With well trained practitioners and interdisciplinary collaboration, many "difficult patients", in terms of medical and behavioural issues, can be managed well and find a dental home within their own communities.

A Systematic Review and Meta-analysis: Ways to Go With the Future Online Intervention Modalities of Obesity and Overweight Care for Middle-aged Adults

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Abstract

Although technology-based health communication program is widely offering these days, low-income populations are facing barriers (e.g., digital divide, low eHealth literacy) to use of healthcare and preventive services. It is important for the population to identify more tailored solutions. This research focuses on discussing current health communication interventions for the low-income population to support their use of health service. The initial samples were collected from five databases (CINAHL, Cochrane Library, PsycINFO, PUBMED, and Web of Science) between January 2002 and January 2023. We included Randomized Control Trials (RCTs) with technology-based interventions for patient engagement among the low- income/Medicaid population for at least 3-month participation. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis were referred for data extraction. Then, Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework was used to synthesize the data. 16 RCTs were extracted for the data synthesis. Reach: diverse race/ethnic groups (Hispanic/Latino, Black/African American, White, and mixed race) were included and recruited from clinics. Effectiveness: 11 studies showed significant effectiveness in promoting healthcare utilization. Adoption: interventions were applied for different target areas (e.g., chronic disease management, children care, or OBGYN). Implementation: both single modality (e.g., texting or apps) and mixed modalities (texting, apps, social media, emails, etc.) as well as both standard and tailored messages were commonly adopted; interaction platforms were launched with providers but limited among participants. Maintenance: the average dropout rate was 12%. Personalized strategies and interactive platforms with mixed modalities as a healthcare program could work better for the low-income population.

Obesity and Stroke-significant Comorbidities and Long Term Management

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Abstract

Introduction: Obesity is a significant risk factor for stroke, but its frequency among acute stroke patients varies widely in reported studies (18-45%). This study aimed to establish the prevalence of obesity in acute stroke patients and identify appropriate interventions based on NICE guidelines.

Methods: Study included acute ischaemic stroke (IS) and intracerebral haemorrhage (ICH) patients admitted to Salford Royal from January 1 to December 31, 2023. Data was obtained from the Stroke Sentinel National Audit Patient (SSNAP) database and linked to electronic patient records. Obesity was defined using the National Institutes of Health classification, and Body Mass Index (BMI) was calculated based on admission weight and height. Demographic variables and co-morbidity data were also collected and analysed descriptively.

Results: Study included 378 patients with a median age of 74 years (IQR 18) and median NIHSS of 5 (IQR 9). The proportion of obese (BMI > 30 kg/m^2) and overweight patients (BMI 25-29.9 kg/m2) was 29.7% each, while 32.4% had a normal BMI (18.5-24.9 kg/m2), and 8.2% were underweight (BMI < 18.5 kg/m2). Compared to patients with normal BMI, obese patients were younger (median age 68 vs. 81 years), had a higher frequency of hypertension (61.8% vs. 55.8%), diabetes mellitus (32% vs. 16%), and atrial fibrillation (19.1% vs. 14.2%). No specific interventions targeting weight reduction were identified at discharge.

Conclusion: Obesity should be counted as a crucial co-morbidity for stroke and accurate BMI measurement is essential. Pathways reflecting targeted interventions for overweight and obese stroke patients are urgently needed to address the obesity issue. Incorporating these interventions into discharge planning could improve long-term outcomes for these patients.

Brachial-ankle Pulse Wave Velocity as a Risk Factor for High Body Fat Mediated by Blood Pressure

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Abstract

Background: Brachial-ankle pulse wave velocity (baPWV) is an important clinical indicator ofaortic stiffness and a risk predictor of cardiovascular disease and associated with obesity. However, whether body mass index (BMI) is associated with baPWV remains controversial. In our study, body fat-related indicators, including BMI, body fat rate (BFR), body fat volume (BFV), waist circumference (WC) were examined from healthy volunteers. We investigated the correlation of baPWV with these indicators and also assessed whether baPWV has the potential to predict these indicators.

Methods: A total of 429 healthy participants were enrolled in this study. Body fat indices, blood pressures, baPWV and blood metabolic indices were measured and recorded. The association of baPWV and indices reflecting body fat and blood pressure, as well as mediation effect were analyzed.

Results: Three different types of baPWV values were significantly correlated. Mean level of baPWV was an independent risk factor for WC, BMI, BFR and BFV (exp(β) = 1.011, 1.004, 1.010 and 1.009, respectively, $P < 0.001$ for all) but not BMR. As for mediation effects, baPWV positively influenced WC (Total effect = 0.011, $P < 0.001$), BMI (Total effect = 0.004, $P < 0.001$) and BFV (Total effect = 0.009, $P < 0.001$) in indirect way mediated by SBP and DBP, while baPWV influenced BFR in both direct (Effect = 0.004, $P = 0.018$) and indirect way.

Conclusions: Levels of baPWV correlated with obesity and is an independent risk factor for WC, BMI, BFR and BFV. Besides, baPWV positively associated with WC, BMI and BFV mainly in indirect way mediated by SBP and DBP, and baPWV associated with BFR in both direct and indirect way.

Fatty Liver is: The Strongest Predictor of Coronary Artery Disease

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Abstract

Liver and visceral fat accumulation are increasingly associated with metabolic syndrome. The individual contribution of liver and visceral fat accumulation to coronary artery disease (CAD) is not clear. We studied the association between liver, visceral fat accumulation, insulin resistance, atherosclerosis and CAD.

The findings of the fatty liver and the high visceral fat area groups show significant differences in their medical history hypertension, metabolic syndrome, diabetes, liver function and triglyceride levels.

There were no significant difference between the two groups in age, gender, alcohol intake, BMI, LDL or HDL serum levels.

Limitation

The diagnosis of fatty liver done by non-enhanced CT rather than by liver biopsy, the gold standard. However, a cutoff of liver–spleen density ≥ -10 HU identifies patients with diffuse fatty liver with an 87% sensitivity and 90% specificity.

Fibro-scans and Fib-4 have not been studied in this research.

Conclusions

We found that fat accumulation in liver and the visceral &cutaneous area and meta with CAD

We found that liver fat accumulation contributes more to the risk of coronary artery accumulation.

Physicians should not only aggressively treat NAFLD patients for their liver disease, underlying CAD risk factors.

Patients with NAFLD will have major CAD events and die prior to developing advanced.

Significance of Oral Disposition Index Calculated from Meal Tolerance Test to Evaluate Normalization of Post-prandial Glucose and Triglyceride Metabolism in Morbidly Obese Patients after Laparoscopic Sleeve Gastrectomy

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Abstract

To investigate normalization of post-prandial glycaemic and triglyceride excursions in patients with morbid obesity after lap-

aroscopic sleeve gastrectomy (LSG), we introduced a new meal tolerance test (MTT) containing 75g glucose and a fat- and protein-containing meal. We found that 75 g oral glucose tolerance test (OGTT) could not use to evaluate normalization of glucose tolerance in post-LSG patients due to dumping syndrome. This post-prandial hypoglycemia after 75 g OGTT was not detected in the MTT after LSG. The 2h-plasma glucose (PG) values after MTT were significantly negatively correlated with disposition index (DI) values calculated from MTT data both before and after LSG, respectively. Furthermore, DI values calculated from MTT were progressively lowering from normal glucose tolerance (NGT) to diabetes (DM) after LSG. DI values in NGT patients were improved, but not those values in DM patients post-LSG compared to pre-LSG data. However, post-prandial 2h-triglyceride (TG) values after the MTT were not significantly different between NGT and DM patients because of no association of 2h-TG with DI values after LSG. Glicentin, GLP-1, and GIP secretions were stimulated by a glucose-concentration dependent manner during both OGTT and MTT, respectively. Moreover, in the MTT, glucose-induced insulin secretion for 30 min was significantly correlated with either glicentin or GLP-1 secretions after LSG In contrast, glucose-induced increase in GIP secretion was not significantly associated with stimulation of insulin secretion post-LSG. In conclusion, we showed that a new MTT was beneficial to evaluate normalization of post-prandial glucose and triglyceride metabolism in morbidly obese patients after LSG surgery.

Key Risk Factors and Reasons for All-cause Readmission Following Bariatric Surgery: A Systematic Review and Meta-analysis

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Abstract

Background: In tandem with the rising popularity of bariatric surgery, its corresponding readmission rate has been increasingly gaining value as a quality benchmark for performance evaluation. Therefore, our study aims to shed light on the risk factors and reasons for readmission after bariatric surgery.

Methods: Medline and Embase were systematically searched through November 2022 for studies reporting the risk factors and causes of readmission. A pairwise meta-analysis with odd ratios was used to estimate the risk factors for readmission using the generalized linear mixed model. A single-arm meta-analysis of proportions was used to determine the reasons for readmissions.

Results: 1,794,884 patients from 17 studies were included, of whom 88,513 (4.9%) were readmitted. Compared to White race/ethnicity, Black race/ethnicity (OR: 1.49, 95%CI: 1.36 to 1.63, p < 0.0001) was associated with significantly higher readmission risks. Patients who had adjustable gastric banding (OR 0.43, 95%CI: 0.30 to 0.60, p = 0.0004) and sleeve gastrectomy (OR: 0.68, 95%CI: 0.56 to 0.82, p = 0.0009) performed had lower odds of readmission than those who had gastric bypass performed. A body mass index of 50kg/m2 and above was correlated with readmission, compared to a body mass index of less than 40kg/m2. In relation to comorbidities, readmission was significantly associated with hypertension, diabetes, and obstructive sleep apnea. The most common causes of hospitalizations were infections (10.48%), followed by leaks (10.42%), and abdominal pain (9.81%).

Conclusions: This review identified numerous risk factors and reasons leading to readmission. Better recognition of key risk factors and causes could improve decision- making for targeted preventive measures.

Keywords: Bariatric surgery, Readmission, Risk factors, Systematic review, Meta-analysis

Robot Assisted Bariatric Surgery in a Superobese Patient

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Abstract

Obesity is a chronic disease, with multifactorial etiology, and complex treatment involving psychological, behavioral, social and genetic factors, associated with multiple metabolic and cardiovascular complications. In Brazil, more than 51% of the population are overweight, with approximately 22 million obese people, which corresponds to 17% of the population, and approximately six million are morbidly obese. However, robotic surgery excels over traditional laparoscopic surgery in dexterity and visualization and may be advantageous in this population. Robotic platforms may help the surgeon to overcome the technical difficulties in superobese (BMI ≥ 50 kg/m^2) patients, in which multi-quadrant operations could be challenging. The aim of this video is to show a robotic bariatric surgery patient with super obesity and comorbidities.

Immune Checkpoint Inhibitor- and Phosphatidylinositol-3-Kinase Inhibitor- related Diabetes Induced by Antineoplastic Drugs: Two Case Reports and A Literature Review

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Abstract

Immune checkpoint inhibitor (ICI) and phosphatidylinositol-3-kinase inhibitor (PI3Ki)- related diabetes mellitus are common side effects of anti-tumor drug use that present mainly as hyperglycemia. Here, we present two case reports of diabetes mellitus caused by the use of toripalimab and alpelisib, respectively, in cancer treatment, and a comprehensive, comparative review of the literature on these forms of diabetes. Case 1 presented with diabetic ketoacidosis and was diagnosed with ICI-related diabetes mellitus and treated with insulin. Case 2 was diagnosed with PI3Ki-related diabetes mellitus, and her blood glucose level returned to normal with the use of metformin and dapagliflozin. We systematically searched the PubMed database for articles on ICI- and PI3Ki-related diabetes mellitus and characterized the differences in clinical features and treatment between these two forms of diabetes.

The Silent Struggle-obesity's Overlooked Impact on Mental Health

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Abstract

Obesity is one of the largest causes of death, ranking fifth worldwide. The obesity epidemic has been silent, slowly increasing in size to be a major health concern. Although obesity's impact on cardiovascular diseases, bone health, reproductive health, and DM type-2 is commonly researched, though the effect of obesity on mental health, in addition to mental health's influence on obesity has been undermined. Since 1990, worldwide adult obesity has doubled, and adolescent obesity has quadrupled. In 2022, over 390 million children who were 5-19 years old were overweight, and 160 million of them were living with obesity. Adolescent obesity has detrimental psychosocial consequences which results in lower academic performance as well as poor quality of life, caused by an amalgamation of stigma, discrimination, and bullying. Research shows that obesity is related to an approximate 25% increased risk of developing mood and anxiety disorders. Studies have also identified that obesity heavily influences depression and suicide. Another issue to consider is how weight bias and discrimination of weight further worsens mental health issues, separate from the weight itself. Unfortunately, when treating mental health disorders, obesity is impacted as antipsychotic medications contain side effects including weight gain. The single solution to stopping this epidemic is to understand the repercussions of obesity with an inclusive mindset, allowing thoughts of mental health to be involved in this discussion. When looking at this information, it is imperative that healthcare professionals focus wholesome approach that highlights issue of mental health along with the treatment of obesity-adjacent disease.

Increased Body Mass Index of Women Exposed to War Stress

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Abstract

This paper will review the research on body mass index (BMI) alterations under the influence of war stress. Examined 126 non-combatant women under the age of 20-39 who lived in Ukraine during the war (G1) and 112 women of the same age who left Ukraine after the outbreak of warfare (G2), with an interval of 5 months including the calculations of BMI, beck depression inventory, C. Spilberger's reactive anxiety scale, and Mississippi post-traumatic stress disorder scale. There was significant ($p < 0.001$) growth in BMI in G1: from 27,388 (4,423) kg/m^2 to 28,316 (4,858) kg/m^2, while in G2 there were no essential changes in BMI: 27,637 (3,791) kg/m^2 and 27,741 (4,063) kg/m^2 ($p > 0.05$). Accordingly, in G1 body weight increased: from 77.8 (9.7) kg to 80.5 (11.1) kg ($p < 0.001$), while in G2 group there were no important changes: 78.8 (7.4) kg and 79.1 (8.0) kg ($p > 0.05$). Also, in G1 the proportion of women with ordinary body weight decreased from 26.2% to 18.2% and increased with obesity: Degree I from 11.9% to 17.5%, degree II from 6.3% to 8.7%, and degree III from 0.8% to 4.8%. In parallel with the increase in

BMI, there was a considerable rise in depression levels, reactive anxiety, and post-traumatic stress. An increase in BMI revealed significant correlations with the growth of depression rates (rS = 0.567, p < 0.001), reactive anxiety (rS = 0.578, p < 0.001), and post-traumatic disorder (rS = 0.536, p < 0.001). A connection was established between war stress and increased BMI in parallel with the severity of depression, reactive anxiety, and post-traumatic stress disorder.

Factors Associated with Maternal Obesity and Overweight: A Cross-sectional Study Among Moroccan Women in Marrakech

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Abstract

Background: Maternal obesity is increasingly recognized as a significant public health issue. This study aims to identify the sociodemographic and lifestyle risk factors, as well as the outcomes associated with maternal obesity and overweight among Moroccan women in Marrakech.

Methods: A cross-sectional study was conducted from November 2021 to December 2022 at the maternity health facility of Mohammed VI Hospital and a major health center with a delivery unit in Marrakech, Morocco. Participants were categorized into four groups based on their pre-pregnancy body mass index (BMI): underweight, normal weight, overweight, and obese. The chi-square test (χ^2) was utilized to analyze the association between sociodemographic and lifestyle factors and maternal obesity/overweight, as well as maternal and neonatal complications.

Results: The study included 400 parturient women with singleton pregnancies. The prevalence of overweight and obesity was 29.8% and 31.5%, respectively. Factors such as maternal age, type of housing, participation in sports, and feelings about pregnancy were significantly correlated with an increased risk of maternal obesity and overweight. Overweight and obese women had a significantly higher risk of gestational diabetes, hypertension, anemia, cesarean delivery, and fetal macrosomia compared to those with normal weight (P < 0.05).

Conclusion: Maternal overweight and obesity are significantly associated with socio- economic, lifestyle, and psychological factors, leading to serious complications for both mother and baby. Further research is needed to develop effective preventive measures and interventions for maternal obesity and overweight.

Extreme Lifetime Body Mass Index Trajectories are Associated with Contrasting Lung Function Abnormalities in Mid-adulthood: Tasmanian Longitudinal Health Study

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Abstract

Background: The impact of lifetime body mass index (BMI) trajectories on adult lung function has not been investigated previously. We focused on associations between BMI trajectories from childhood to mid-adulthood and lung function abnormalities and COPD.

Methods: Five BMI trajectories were identified (n = 4194) from age five to 43 using group-based trajectory modelling in the Tasmanian Longitudinal Health Study. Lung function outcomes, including lung function change, spirometric phenotypes (spirometric restriction only, obstruction only or mixed) and COPD, were defined using spirometry at 45 and 53 years. Associations

between these BMI trajectories and lung function outcomes were investigated using multivariable regression.

Findings: Compared to the average BMI trajectory, the Child Average-Increasing BMI trajectory was associated with greater FVC decline from 45 to 53 years (β = -178ml; 95%CI -300.6, -55.4) and lower FVC at 53 years (-227ml; -345.3, -109.1). The High BMI trajectory was also associated with spirometric restriction (OR = 6.9; 2.3, 21.1), supported by static lung volumes and transfer factor evidence. The Low BMI trajectory was associated with an obstructive picture: lower FEV1 (β = -124ml; -196.4, -51.4) and FVC (-91ml; -173.4, -7.7), but with reduced FEV1/FVC (-1.2%; -2.2, -0.1) at 45 years, and gave a similar pattern at 53 years. No associations were observed with spirometrically defined COPD.

Interpretation: Our findings revealed lung function abnormalities at the extreme ends of the BMI trajectories. These results emphasize the importance of changes in BMI over time and the need to maintain an average weight throughout life.

What Do Parents Think About Child's Routine Height and Weight Measures? A Qualitative Study

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Abstract

Background: Routine height and weight screening of children accessing health services in Southwestern Sydney Local Health District (SWSLHD) was implemented to address childhood obesity. This qualitative study aims to explore the views of parents/carers regarding the role of healthcare professionals (HCPs) in measuring their child and raising the issue of weight when accessing health services.

Methods: A qualitative study using semi-structured interviews was performed. Parents/ carers of children who had their height and weight measured at a SWSLHD facility were invited to participate. Purposive sampling was used to select parents/carers of children from different body mass index (BMI) categories and different health settings. Interviews were digitally audio-recorded and transcribed verbatim. The de-identified data were coded and analysed thematically using NVivo.

Results: A total of 24 semi-structured interviews were conducted. Of these, 14 were of parents/ carers of children who were outside the healthy weight range. Three main themes were identified: parental perception of their child's weight, parental expectations, and parental challenges. We found that many parents/carers were unaware of their child's weight status and often underestimated it. Many were open to receiving advice and resources as long as it was addressed professionally and respectfully.

Conclusions: Contrary to the views of some health professionals, parents/carers want to know their child's weight status. They valued the information and advice provided by well- trained clinicians who are confident to raise the issue of weight with parents/carers.

Lonicera japonica, A Homologous Substance of Medicine and Food-A Functional Food Should be Developed to Fight Obesity

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Abstract

Many dietary patterns have been studied for weight loss, yet various limitations remain. We designed a novel weight loss diet (NWLD) with a carbohydrate, protein, and fat (energy) content of 45%, 20%, and 35%, respectively. Saturated fatty acids: monounsaturated fatty acids: polyunsaturated fatty acids ratio was 1:2:1, and insoluble: soluble dietary fiber ratio was 2:1. We aimed to observe the effect of NWLD on weight loss and understand the underlying metabolic mechanisms. Twenty-nine male C57BL/6J mice were selected. Nine mice were fed ordinary feed in a blank control group, and the rest were fed a high- fat diet

(HFD) to establish obese mouse models. Twelve weeks later, obesity models were established, and 10 obese mice were switched to NWLD feeding for 6 weeks. Then we collected serum, intestinal feces and kidneys from the mice, measured obesity- related indicators, gut microbial composition, and fecal metabolite profiles, and analyzed correlations between these indicators. Kidney function indicators were also assessed. The results showed that the NWLD attenuated HFD-induced weight gain, serum triglycerides, and inflammatory factors, optimized body composition and did not impair renal function. Amino acid metabolism pathways and metabolites might play a key role in this process. The dietary formula has a good intervention effect on simple obesity and considers the anti-inflammatory properties of the diet and the protective effect on kidney function. The nutrients ratios are not extreme, which is conducive to the promotion of compliance, so it has a good value and prospect for industrial transformation.

Protective Effect of Jiang Tang Xiao Ke Granule Against Skeletal Muscle IR Via Activation of AMPK/SIRT$_1$/PGC-$_1$α Signaling Pathway

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Abstract

Jiang Tang Xiao Ke (JTXK) granule is a class Chinese herbal formula that has been put into clinical use in the treatment of type 2 diabetes mellitus for decades. However, whether its ability to ameliorate skeletal muscle insulin resistance (IR) is through modulation of AMPK/ SIRT1/PGC-1α signalling pathway remains unknown. Therefore, we aimed to investigate the effects of JTXK granule on IR in skeletal muscle of high fat diet induced diabetic mice and C2C12 cells and analyze the underlying mechanisms. In the present study we showed that JTXK granule attenuated body weight gain, reduced body fat mass, improved body lean mass and enhanced muscle performance of diabetic mice. JTXK granule also improved glucose metabolism, skeletal muscle insulin sensitivity, and partially reversed abnormal serum lipid levels, which might be related to regulation of AMPK/ SIRT1/PGC- 1α pathway, both in skeletal muscle tissue of diabetic mice and C2C12 cells. Furthermore, drug containing serum of JTXK granule can enhance glucose uptake and mitochondrial respiration in C2C12 cells, and AMPKα was proven to be closely involved in this process. Taken together, these results suggest that JTXK granule ameliorates skeletal muscle IR through activation of AMPK/SIRT1/PGC-1α signaling pathway, which offers a novel perspective of this formula to combat IR related metabolic diseases.

Comparison of Changes in the Combination of the Triglyceride-glucose Index and Obesity Indicators for Predicting the Risk of Cardiovascular Diseases

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Abstract

Background: Cardiovascular disease (CVD) is closely associated with the triglyceride glucose (TyG) index and its combination with obesity indices. However, there is limited research on the relationship between changes in TyG-related indices and CVD.

Methods: The data for this prospective cohort study were obtained from the China Health and Retirement Longitudinal Study. The K-means algorithm was used to classify changes in each TyG-related index into four classes (Class 1 to Class 4). Multivariate logistic regressions were used to evaluate the associations between the changes in TyG-related indices and incident CVD.

Results: In total, 3,243 participants were included in this study, of whom 1,761 (54.4%) were female, with a mean age of 57.62 years at baseline. Over a 5-year follow-up, 637 (19.6%) participants developed CVD. Fully adjusted logistic regression revealed significant associations between changes in TyG-related indices, cumulative TyG-related indices and incident CVD. Among these changes in TyG-related indices, changes in TyG-waist circumference (WC) showed the strongest association with incident CVD. Compared to the participants in Class 1 of changes in TyG-WC, the odds ratio (OR) for participants in Class 2 was 1.41 (95% confidence interval (CI): 1.08-1.84), the OR for participants in Class 3 was 1.54 (95% CI: 1.15-2.07), and the OR for participants in Class 4 was 1.94 (95% CI:
1.34-2.80).

Conclusions: Changes in TyG-related indices are independently associated with the risk of CVD. Changes in TyG-WC are expected to become more effective indicators for identifying individuals at a heightened risk of CVD.

Diet of a Protein Ingredient Linked to Reduction of Fat in Host Animals

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Abstract

A rapid-growing bacterial strain, isolated on basis of vitality under conditions of continuous washout in a chemostat, was cultured to obtain its single-cell protein ingredient. The nutritional value of the single-cell protein derived from this high-vitality strain, referred to as hSCP, was assessed by supplementing it in the diet of one-day-old broiler chickens. The hSCP-supplemented group showed lower weight-gain compared with the control group, with greater Feed-Efficiency and greater lactic acid bacterial number. When a dogfood containing 0.2% hSCP was manufactured and fed to pet dogs by consumers with subsequent collection of feces, the fecal bacterial composition was reshaped to resemble a healthy gut microbiota, accompanied by a slight weight loss. To explore the potential of the hSCP as an anti-obesity supplement, obese mice were administered high-fat-diet with hSCP (0, 0.05, and 0.5%) for 10 and 28 days. Based on the examination of dissected tissues and visual observations, the hSCP-fed obese mice exhibited reductions in body fat, serum fat components, and C-reactive protein concentration, along with a reshaping of the faecal microbiota leading to the proliferation of anti-obesity bacterial biomarkers. Further tests on mice administered a normal-calorie-diet or a high-fat-diet containing 0.05% hSCP for 28 days (n = 3 per group) resulted in a greater distribution of goblet cells in their colon, along with enhanced mucin production in the lower gastrointestinal tract. The sequence of dietary incorporation of the hSCP ingredient is suggested to be linked to the reduction of fat in host animals.

Early-aged Mice Stay Metabolically Stable with High Fat Diet

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Abstract

Background: Matrix metalloproteinase-9 (MMP-9) has been implicated in the pathogenesis of inflammatory diseases and regulated by LPS. Tryptophan metabolite known as ITE, an endogenous aryl hydrocarbon receptor ligand, plays an important role in immune and inflammation regulation. However, it is not clear whether ITE could have any effects on the LPS induced MMP-9 expression in monocytic cells. Here, we investigated the effect of ITE on LPS induced MMP-9 expression and the mechanism involved.

Methods: Human monocytic THP-1 and primary monocytes were stimulated with LPS in the presence of a vehicle or ITE. MMP-9 gene expression was determined by real-time RT-PCR. MMP-9 protein was determined by ELISA. MMP-9 biological activity was determined by Zymography. NF-kB or AP-1 binding to the promoter region of MMP-9 was determined by ChIP-qPCR.

Results: Our results show that pretreatment with ITE significantly blocked LPS induced MMP-9 expression at both mRNA and biologically active protein secretion levels in monocytic THP-1 cells and reporter cells. Similar results were seen in primary monocytes. ITE attenuates the TNF-α induced phosphorylation of JNK, c-Jun, ERK1/2, and NF-kB. Increased NF-κB/AP-1 activity, resulting from LPS stimulation, was decreased by ITE. Moreover, chromatin immunoprecipitation (Chip) assay followed by qRT-PCR revealed LPS induced increased binding of NF-kB or AP-1 at the MMP-9 promoter region was inhibited by ITE, resulting in suppression of MMP-9 gene expression.

Conclusion: Our study demonstrated that ITE reduces the TNF-α induced MMP-9 expression via NF-kB / AP-1, suggesting a potential mechanism for attenuating MMP-9-associated inflammatory disorders.

The Longitudinal Association of Body Weight Misclassification in Adolescence with Body Fat and Waist Circumference in Adulthood

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Abstract

Objective: This study examines the longitudinal association between adolescent body weight misclassification and body fat and waist circumference during adulthood.

Design: Birth cohort study. Data collected at 14 and 30 years after birth. To determine misclassification, we compared perceived with measured body weight data. Analyses examines means and mean differences of body fat percentages and waist circumference level across weight misclassification groups. Early life and adolescent covariates were included in the data analyses.

Setting: Children of all consecutive public obstetrical patients delivered at a major obstetrical hospital in Brisbane, Australia.

Participants: Participants were (n 1002) those with measured and perceived body weight at 14-year follow-up as well as actual measure of adult body fat and waist circumference at 30-year follow-up.

Results: Adolescent body weight underestimation was significantly associated with an increase in body fat percentages and waist circumference in adulthood compared to those who correctly estimated their body weight for males and females. In mean difference analyses, adolescent males and females who underestimated their body weight were found to have significantly higher body fat and waist circumference means than those who correctly estimate their body weight in both unadjusted and adjusted comparisons. Males who, as adolescent, overestimated their body weight have higher body fat and waist circumference means when they reach adulthood.

Conclusions: Weight underestimation in adolescence predicts increased body fat and waist circumference during adulthood. Increase awareness of weight misclassification and actual body weight might contribute to better control of weight gain.

The Association Between Nutritional Status and The Quality of Life of Covid-19 Patients in Saudi Arabia: A Cross-sectional Study

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Abstract

COVID-19 adversely affects the nutritional status of patients, and this may negatively impact their quality of life (QOL). The current study determined the association between the nutritional status of COVID-19 patients and their QOL. A cross-sectional study was conducted at Al Madinah Al Munawarah in Saudi Arabia. Patients confirmed with COVID-19 infection and identified as acute severe or acute non-severely ill were enrolled. The WHO- BREF-QOL was used to assess the patients' QOL. Nutritional status was assessed using the Malnutrition Screening Tool, food intake, and BMI. Data was analyzed using SPSS version 28. In total, 515 patients were enrolled, with 391 (76%) having acute non-severe symptoms. Patients (15%) were malnourished and suffered from loss of appetite (32%), low food intake (19.4%) and weight loss (16%). Patients (46.8%) were overweight and/ or obese and most of them were satisfied or very satisfied with their health (80.2%), with 76.2% rating their QOL as good and/or very good. Their BMI was inversely associated with physical, social, and environmental QOL domains. Loss of appetite negatively impacted the physical (p = 0.004, 95% CI 0.086, 0.458) and psychological (p = 0.021, 95% CI 0.034, 0.405) QOL domains. Also, decreased food intake affected patients' physical (p = 0.034, 95% CI 0.018, 0.458) QOL domain. Greater weight loss influenced the psychological (p = 0.005.95% CI 0.002, 0.049) QOL domain. In conclusion, poor nutritional status among COVID-19 patients was associated with adverse health outcomes and impaired QOL. Nutritional interventions should focus on poor nutritional status which will help improve their QOL.

The Association Between Alcohol Intake and Obesity in a Sample of the Irish Adult Population, A Cross-sectional Study

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Abstract

Background: Obesity epidemic is one of the most serious public health challenges of the twenty-first century. Alcohol has been studied as a possible risk factor for obesity, but the evidence is discordant. This study examined the association between alcohol consumption and obesity in a sample of the Irish adult population.

Method: An analytical cross-sectional study was conducted using secondary data from the 2017 Healthy Ireland Survey. The primary survey recruited patients using a two-stage probability-based technique and a face-to-face-administered questionnaire to collect data. Descriptive and comparative data were analysed to identify associations between alcohol- related variables with waist circumference (WC) and body mass index (BMI). Regression analysis was performed to examine the associations between harmful alcohol consumption (AUDIT-C score ≥ 5) (exposure variable) and obesity indicators (WC and BMI), the primary outcomes of interest. Adjustments were made for sociodemographic, health-related, and other alcohol-related variables.

Results: Total of 6864 participants, aged 25 and older, took part in this survey (response rate = 60.4%). Most of the participants (81.9%) were alcohol drinkers, with the majority drinking less than three times per week (76.3%); 47.7% were considered harmful drinkers (AUDIT-C score ≥ 5). After controlling for possible confounders, positive associations of harmful alcohol consumption with WC (β = 1.72, 95% CI: 0.25, 3.19) and BMI (OR = 1.47, 95% CI: 1.10, 1.96) were observed. Binge drinking was positively associated with WC (β = 1.71, 95% CI: 0.50, 2.91), while alcohol consumption frequency was significantly and inversely associated with BMI (OR = 0.59, 95% CI: 0.44, 0.78).

Conclusion: Harmful alcohol consumption was associated with obesity (high BMI, large WC) after controlling for possible confounders. Frequent binge drinkers were more likely to have a large WC, while frequent alcohol consumers were less likely to have obesity. Further longitudinal studies to examine the exact association between alcohol consumption and obesity are warranted.

Developing Healthy Lifestyle Behaviors in Early Age - An Intervention Study in Kindergartens

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Abstract

Childhood obesity prevention is a leading public health challenge requiring the adoption of healthy lifestyles at an early age. We examined how the kindergarten environment can promote eating sensibly, drinking water and becoming physically active. The effects of an intervention program among 42 Israeli kindergartens (1048 children, aged 4–6) whose teachers participated in a health education training program were compared to 32 kindergartens (842 children) whose teachers did not undergo this training program. An eight-month intervention program focused on knowledge/mathematical/logical/ critical thinking, self-regulation/control acquisition, and sensible decision-making abilities. We hypothesized that nutrition and physical-exercise-oriented intervention programs, combining knowledge/mathematical logical thinking, would positively impact the quality of children's mid-morning snack and water consumption, their ability to express feelings following physical exercise, and the adoption of healthy lifestyles at home. The quality of mid-morning snacks and water consumption were observed in both groups pre- and post- intervention. Qualitative interviews documented children's subjective feelings following physical exercise. A significant improvement ($p < 0.001$) was observed in the mid-morning snacks composition and in water drinking habits in the intervention group; 80% of children offered physiological explanations regarding energy expenditure processes following intense physical exercise. This study shows that young children can understand, take responsibility, change behavior and influence their parents to provide them with preferred foods. Moreover, they can be agents of change and leaders for improving lifestyle activities.

In conclusion, kindergarten interventions implemented by trained teachers can promote adoption of health behaviors necessary for obesity prevention.

Effect of Liraglutide on the Weight and Body Composition of People with Obesity: Presentation of Two Case Reports

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Abstract

Saxenda is a drug approved in Europe for the treatment of obesity. Although its effectiveness has been tested, little attention has been paid to anthropometric changes in patients. The work is based on two case studies, the first fed with a self-managed diet and the second under medical supervision. Both patients were analyzed in body composition through anthropometry. In the first patient there was a reduction of 10 kg. The data are associated with a loss of 10% of fat mass, especially at the abdominal level, where there is a reduction in the circumferences of the waist (-7cm) and abdominal (-9 cm).The lean mass, expressed as mean arm circumference (CMB), has changed from 28 to 27 cm. In the second case, the patient's initial weight was 118 kg, which after a low-calorie diet increased to 126 kg. With the onset of a ketogenic nutritional regime, the subject reached his minimum weight of 114, which was followed by an increase of 5 kg. The introduction of Saxenda in the ketogenic approach has interrupted the trend of weight growth, inducing a loss of 6 kg and a reduction in fat mass (-5%), especially at the abdominal level. Contrary to the first case, muscle mass was preserved.

In conclusion, Saxenda is able to reduce weight and fat mass, especially in the abdomen. Anthropometric data might suggest that a controlled diet would preserve muscle mass by avoiding sarcopenia state. Open questions remain the maximum time of drug administration and the possibility of using Saxenda to maintain results obtained from previous diets.

Association of Body Mass Index Increase and the Presence of Urinary Tract Infection in Primigravidae

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Abstract

Antecedents: The nutritional condition of the woman before and during pregnancy is one of the determinants of the risk of maternal morbidity and mortality.

Objective: Determinar la relación del incremento del indexe del masa corporal y la presenza de infección de vías urinarias en primigestas.

Methodology: Estudio de casos y contros en expedientes de primigestas. It was considered as a case when urinary tract infection was present on one or more occasions during pregnancy, and as a control when no urinary tract infection was present.

The diagnosis of urinary tract infection was made through a general examination of urine (pH greater than 6, density greater than 1,020, leukocituria greater than 8 leucocytes mm/3 and bacteriuria greater than 100,000 UFC/mL), with signs and urinary symptoms (urgency, frequency, dysuria, pyuria and hematuria), as well as urocultivo (100,000 or more UFC per ml). The sample size was calculated with the formula of cases and controls, the calculated size corresponded to 28 primigestas, sin embargo worked with 266 cases and 27 controls.

They studied sociodemographic variables (age, schooling, marital life and occupation), obstetric conditions (obstetric risk, weeks of prenatal control, weeks of pregnancy resolution and number of prenatal consultations), anthropometry at the beginning and end of pregnancy (weight, height, index of body mass and nutritional condition -underweight, normal weight, overweight and obesity-, weight gain and weight gain) and modification of the nutritional condition at the beginning and end of the pregnancy.

The statistical analysis plan included percentages, averages, confidence intervals for averages, Chi2 test, ratio of moms, confidence intervals for moms, simple linear regression and projection of the occurrence of the event.

Results: When the increase in body mass index is 5 Kg/m2, the urinary tract infection average corresponds to 1.62 and if the body mass index increase is 10 Kg/m2, the urinary tract infection average is 2.3. The average of urinary tract infections during pregnancy is 1.57 (IC 95%; 1.45-1.68) and during pregnancy 90.8% of primigestas (IC95%; 87.5-94.1) present 1 or more urinary tract infections. The regression equation to predict the number of urinary tract infections from the increase in body mass index is: y = 1.111 + 0.102 (incremento de indice de masa corporal). When the increase in body mass index is 5 Kg/m2, the urinary tract infection average corresponds to 1.62 and if the increase in body mass index is 10 Kg/m2, the urinary tract infection average is 2.3. En la.

Conclusion: A greater increase in body mass index during primigesta pregnancy, the higher the probability of presenting urinary tract infection.

Evaluating Experimental Injuries to Obese Occupants in Frontal Impacts: The Role of Posture and Seat Stiffness

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Abstract

The study aimed to analyze injuries and patterns in obese occupants during frontal impacts, considering crash pulse, seatback angle, seat stiffness, and presence/absence of knee bolsters. Eighteen obese post- mortem human subjects (PMHS) were tested on a sled buck with seatback angles of 25° (upright) or 45° (reclined) using semi-rigid seats representing front and rear seat stiffness. The subjects were restrained with a seat belt and pretensioner. Frontal impacts were conducted at 8.9 m/s (low velocity) and 13.9 m/s (high velocity). X-rays, CT scans, and autopsies were performed post-test, and Maximum AIS (MAIS) and Injury Severity Scores (ISS) were calculated. The mean age, weight, height, and BMI of the subjects were 66 years, 106 kg, 1.7 m, and 36 kg/m^2, respectively, with no significant differences between groups. In low-velocity tests, ISS were 9, 18, and 9 for upright, and 9, 18, and 4 for reclined postures. In high- velocity tests, ISS were 29, 17, and 9 for upright, and 27, 13, and 27 for reclined postures. High-velocity reclined tests with rear seat stiffness yielded ISS of 34, 27, and 14, and 22, 0, and 13 with knee bolsters. At low velocities, injuries were localized, with ISS in the mild category. At high velocities, injuries involved multiple regions, with ISS in the major trauma category. Rear seat stiffness resulted in the highest ISS. Injuries did not significantly vary between postures or energy inputs, but chest and pelvis injuries in both postures suggest additional consequences for obese occupants.

Evidence Based Dietary Pattern in South Asian Patients: Setting Goals

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Abstract

South Asians experience unique health challenges that predispose this demographic to cardiometabolic diseases at lower BMIs. This population, including individuals from India, Pakistan, Bangladesh, and Sri Lanka, faces high rates of cardiovascular diseases, cancers, diabetes, and strokes at BMIs below the WHO's standard overweight threshold. For non- Asians, a BMI of 25-30 kg/m^2 is considered overweight, while for Asians, it's reduced to 23-27.4 kg/m^2 due to different associations between BMI and health risks. Culturally tailored interventions are therefore crucial for effective lifestyle management. A whole food, plant-based diet (WFPD) is one such strategy, suggesting meals with non-starchy vegetables like okra, tindora, eggplant, and leafy greens; plant-based proteins such as lentils and paneer; and healthy grains like whole wheat breads, millets, tapioca, and barley. This diet can improve weight, BMI, cholesterol, HbA1c, and reduce the risk of non- alcoholic fatty liver disease (NAFLD). Time-restricted eating (TRE), or intermittent fasting, is another approach that aligns with traditional fasting practices in South Asian cultures. TRE involves consuming daily calories within a specific window, improving insulin resistance and metabolic health while reducing obesity and diabetes risks. Common TRE regimens include completing all meals within an 8-hour window, consuming a low-calorie diet every other day, and the 5:2 diet, which involves fasting twice weekly. Because South Asians develop cardiometabolic disease at lower BMIs, lifestyle interventions are essential. The best diet is one that aligns with a patient's cultural and traditional food practices, ensuring adherence and effectiveness in reducing cardiometabolic risks.

Mental Health, Learning, and Family Factors in Pediatric Obesity

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Abstract

Obesity in the pediatric population confers multifaceted implications for mental and physical health, social relationships, academic achievement, and general development. Participants in a research study included 5,573 elementary school students enrolled in a high-poverty urban public school setting within the United States. Through an informal yet comprehensive assessment process, students identified as exhibiting overweight issues were compared to peers not designated as overweight across several relevant categories. Overweight students were more likely to be from lower socioeconomic backgrounds; have a high association with special education service needs; represent a more intensive overall risk level as perceived by student support staff; and mostly exhibit decreased performance in report card grades, standardized test scores, and academic engagement. Moreover, inclusion of psychological and familial risk and resilience factors yielded additional associations with regard to students' educational functioning. Results confirm previously documented disparities in school trajectory but also serve to illustrate how strengths-based approaches should be considered when targeting health conditions. This is especially relevant in an underserved

context, in which regular access to services may be limited. Therefore, reliance on initial screening measures becomes necessary as a preventative mechanism to better assist children in need and to facilitate holistic intervention planning.

Maternal Undernutrition Alters Offspring Pituitary Proteome and Male Transcriptome, Promoting Resistance to High-fat Diet-induced Weight Gain

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Abstract

The neonatal leptin surge, involved in anorexigenic neuron development, is altered by maternal nutrition. In mice, we have shown that maternal caloric restriction (CR) alters offspring neonatal development and adult metabolic function when challenged by a high fat diet (HFD). The 20% CR model caused a premature neonatal leptin surge, whereas the 30% CR model blunted the surge at PND10. The pituitary proteome of PND10 30% CR neonates revealed 15 upregulated and 7 downregulated proteins, associated with a positive z-score for the "COPII mediated vesicle transport" pathway and a negative z-score for "processing of capped intron-containing pre-mRNA" pathway. Both CR maternal models produced male and female offspring that were significantly smaller, in terms of weight and length, and females had delayed puberty.

Adult offspring born to CR dams had a sexually dimorphic response to the high fat diet, where males did not gain significant weight compared to controls. The 30% CR alone did not alter the pituitary proteome response, except after HFD stress. Some identified proteins were sex and condition specific, such as corticotropin-releasing factor-binding protein, which was uniquely decreased in the CR30-HFD males. In adipose tissue of male HFD offspring, the CR model blunted weight gain associated genes and increased genes protective against weight gain. The CR model had no effect on the increased expression of genes associated with non-alcoholic liver disease. These data reveal tissue- and sex-specific changes in gene and protein regulation following mild maternal undernutrition, which may offer male offspring protection against diet induced weight gain.

Citation: 8th International Conference on Obesity and Chronic Diseases (ICOCD-2024): *J Obes Chronic Dis* 8(Suppl 1): S1-S21.

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Received: November 19, 2024, **Accepted:** November 25, 2024, **Published:** November 29, 2024